BEFORE

THE PUBLIC SERVICE COMMISSION OF

SOUTH CAROLINA

DOCKET NOS. 2019-226-E

IN RE: South Carolina Energy Freedom Act (House Bill 3659) Proceeding Related to S.C. Code Ann. Section 58-37-40 and Integrated Resource Plans for Dominion Energy South Carolina, Incorporated	**DOMINION ENERGY SOUTH CAROLINA, INC.'S PETITION FOR REHEARING OR RECONSIDERATION**

Pursuant to S.C. Code Ann. § 58-27-2150 and S.C. Code Ann. Regs. 103-825, Dominion Energy South Carolina, Inc. ("DESC" or the "Company") hereby respectfully petitions the Public Service Commission of South Carolina ("Commission") to rehear or reconsider certain findings and conclusions in Order No. 2020-832. The Order was served on DESC on December 23, 2020.

The relief requested in this Petition for Rehearing is intended to further the Company's ability to provide the Commission with the information, analyses and IRP modifications it seeks. Work to comply with the Order has been underway since the directive on which it was based was issued (and in some cases, well before that directive) and is proceeding with all possible diligence. DESC intends to comply with the Order as promptly and thoroughly as possible. However, the review of the Order and the initial work to comply with it have identified two specific areas that pose particularly important challenges related to practicality and schedule. If not addressed, these matters could interfere with the Company's ability to produce the studies, models and modifications that the Order envisions. For that reason, DESC respectfully asks the Commission to reconsider its Order on those points in light of the information provided here.

Specifically, DESC petitions the Commission for a rehearing or reconsideration of (a) the Commission's determination on the thirty-day deadline for completing near term solar analyses, and (b) the decision to reassess the selection of PLEXOS capacity optimization software for implementation in 2022 or thereafter. The following is a summary of the relief requested and grounds for it.

1. **The Thirty-Day Near-Term Solar Analyses:** The Order requires the Company to submit additional production cost modeling and analysis to assess near-term solar acquisitions and submit the results within thirty days from the date of Order No. 2020-832 (the "Near-Term Solar Analyses"). (Order at 86.) The Order also instructs DESC to base the Near-Term Solar Analyses on the modification of multiple assumptions and inputs on which its planning model is to be based going forward (the "2020 Modifications"). This is impractical for several substantial reasons as explained in this petition. Together as a whole, these additional requirements will make compliance with this Order impossible as explained below.

   In order to comply with this Order, all of the model inputs must be modified consistent with the Modified 2020 IRP. These inputs include:

   - Create 7 new Resource plans – RP2, RP7a1, RP7a2, RP7a3, RP7b1, RP7b2, RP7b3, which represent RP7a and RP7b with three different flexible solar power purchase agreement ("PPA") costs and modify RP2 to use new reserve margin assumptions;

- Create battery energy storage system (“BESS”) PPA for use with RP7b1-3;
- Calculate new estimated load carrying capability (“ELCC”) for 400 MW of flexible solar PPAs in 2023;
- Update capital assumptions cost for new gas generation;
- Update AFUDC for gas, solar and battery construction projects;
- Incorporate solar integration costs;
- Revise escalation rates for solar and BESS and modify 126 revenue requirement spreadsheets to reflect these new rates;
- Revise the low, medium and high gas price forecast;
- Revise the CO_2 high price assumption;
- Update the low, medium, high DSM cases;
- Update the low, base and high energy and demand forecast;
- Update the coal price forecast;
- Update the renewable energy forecast;
- Revise all resource plans to meet the full peaking reserve margin target using a single, not a dual, reserve margin assumption;
- Revise all other PROSYM inputs;
- Run 126 scenarios in PROSYM (7 Resource Plans x 18 sensitivities);
- Calculate revenue requirements by adding newly modeled data to 126 revised revenue requirements spreadsheets;

- Create an analysis and ranking of all resource plans; and
- Create a document to describe and document this analysis.

DESC believes it is not possible to complete this scope of work within 30 days. Instead, DESC would respectfully request that the Order be revised so that the Near-Term Solar Analyses can be completed within 60 days along with the modeling of the other resource plans. This will allow for the logical sequencing of the work and testing of the model before the Near-Term Solar Analyses are run. Furthermore, as discussed in more detail below, the primary justification for the 30-day deadline was the need to consider action before the anticipated expiration of Federal Investment Tax Credits for renewable energy projects. In the H.R. 133, the Consolidated Appropriations Act, 2021, adopted on December 28, 2020, these deadlines were extended by two full years.

2. **Capacity Expansion Modeling Software:** Abandoning the current PLEXOS implementation effort and reassessing model selection is not practical in consideration of the Commission's stated goal of implementing capacity expansion modeling in time for the 2022 IRP Update. The reassessment is also unnecessary considering the current capabilities of PLEXOS. (Order at 29, 91-92.)

This ruling to reopen selection is based on an inaccurate picture of the capabilities and accessibility of the PLEXOS modeling software. That software is being successfully used today in stakeholder-centric planning processes conducted by entities like the PJM Interconnection, MISO, and NY-ISO; by public-facing bodies like the National Renewable Energy Laboratory (NREL), the United States Department of Energy, and the California Public Utilities Commission; by over 350 customers worldwide; and as the record shows, by the Sierra Club's own expert witness in this proceeding. (*See* the Affidavit of James Neely, attached hereto as Exhibit A.)

Furthermore, the PLEXOS software is evolving in capability and accessibility. The sole witness who spoke against it, CCL/SACE witness Ms. Sommer, admitted she was not familiar with the capabilities or accessibility of PLEXOS in its current form. The PLEXOS software is fully capable of supporting the IRP process in South Carolina in all of its aspects. As Sierra Club witness Derek Stenclik explained (who used PLEXOS in this proceeding), "PLEXOS is a third-party industry recognized energy modeling software developed by Energy Exemplar LLC and used by utilities, grid operators, developers, and consultants worldwide." (*Id.*). It is the software used for multiple purposes, and understood and supported by Dominion Energy, Inc., operating utilities. Denying DESC the ability to use it would be contrary to the Commission's policy of supporting merger synergies.

In addition, the directive to reselect capacity expansion software is inconsistent with the goal of implementing such modeling in the 2022 IRP Update. Implementing the capacity expansion modeling by 2022 will require capacity expansion software to be fully implemented and validated during the second half of 2021. Under the current Order, the additional steps required in this process include conducting a stakeholder process to select a possible alternative software model; dealing with any unresolved stakeholder issues at the conclusion of that process; negotiating licenses for DESC and perhaps other users to gain access to the selected model if different from PLEXOS; scheduling and completing training for DESC's employees related to the structure and language of the new model if a different model is selected. Only then could DESC resume the work already underway or about to begin to populate the new model with inputs, assumptions and data; review those inputs with stakeholders; make changes based on stakeholder input; create and validate inter-module links within the program; calibrate, test and validate initial modeling results; review those initial results with stakeholders; and in the final stage, prepare final model runs for inclusion in an IRP. Implementing capacity expansion modeling would be very difficult if not impossible to accomplish by 2022 if the present implementation process is suspended and possibly abandoned to allow a reselection process to occur.

Instead, DESC proposes that it begin to work with stakeholders to review its PLEXOS implementation plan; to review inputs and assumptions to that model as it has committed to do in its Short Term Action Plan (STAP) (Hearing Exhibit 16); to surface and address concerns about accessibility to inputs, output, manuals and the like related to PLEXOS; and to do these things within a concrete implementation framework where substantive decisions can be made. Within this context, DESC is confident that it can demonstrate that the input and output data provided in an easily accessible form by PLEXOS is fully sufficient for intervenors to run their modeling of DESC's system using the models and software of their choosing and on which they and their experts are trained. There is no need or justification from DESC to purchase licenses for third parties.

This approach will focus the process on meaningful and substantive aspects of the model, and supports the goal of presenting initial results of a capacity expansion model in the 2022 IRP update.

As detailed below, DESC believes the substantial evidence in the record supports DESC's position regarding these issues and that the Commission's ruling regarding these issues was in error. In further support of its position, DESC submits that affidavit of James Neely concerning implementation issues and the PLEXOS model. DESC urges the Commission to reconsider its previous findings and conclusions contained in Order No. 2020-832 on the specific issues raised in this Petition for Rehearing or Reconsideration.

STANDARD OF REVIEW

Pursuant to S.C. Code Ann. §58-27-2150, a party may apply to the Commission for a rehearing in respect to any matter determined in the proceeding. Under S.C. Code Ann. Reg. 103-825(4):

> A Petition for Rehearing or Reconsideration shall set forth clearly and concisely:
> (a) The factual and legal issues forming the basis for the petition;
> (b) The alleged error or errors in the Commission order;
> (c) The statutory provision or other authority upon which the petition is based.

"The purpose of a petition for rehearing and/or reconsideration is to allow the Commission the discretion to rehear and/or reexamine the merits of issued orders pursuant to legal or factual questions raised about those orders by parties in interest, prior to a possible appeal." In re: South Carolina Electric & gas Company, Order No. 2013-05 (Feb. 14, 2013).

ALLEGED ERRORS CONTAINED IN THE ORDER

A. Thirty-Day Deadline to Conduct Additional Production Cost Modeling and Analysis

First, Order No. 2020-832 requires DESC to "conduct additional production cost modeling and analysis, as recommended by SCSBA [South Carolina Solar Business Alliance], on an expedited basis (within 30 days of this Order) …." (Order at 86.) Specifically, the Company is to model,

1. The RP2 resource plan (using the 2020 Modifications);
2. SCSBA's proposed RP7-A and RP7-B resource plans (also using the 2020 Modifications);
3. Running three versions of each of RP7-A and RP7-B with flexible solar PPAs assumed at price points of $38.94/MWh, $36/MWh, and $34/MWh;[1] and
4. Running all seven resulting resource plans with an assumption that the addition of solar PPAs will result in integration costs equivalent to $0.96/MWh.

(Order at 86.) Therefore, DESC is being ordered to model seven additional resource plans[2] against eighteen different sensitivities and price assumptions related to natural gas prices, CO_2 costs, and load growth, for a total of 126 individual scenarios. At the same time, the Order requires the Company to prepare these 126 additional scenario analyses using a planning model that must be revised to include multiple changes to assumptions related to items including the capital costs of resources, inflation adjustments, load forecasts, CO_2 forecasts, and natural gas prices. These tasks cannot be accomplished in 30 days. The underlying model must be revised,

[1] Changing the assumed capacity value of a resource creates a new resource plan.
[2] Modeling RP-7A and 7-B each with three different sets of assumptions as to solar prices results in six separate resource plans. RP-2 represents the seventh.

tested, and validated before the 126 specific scenarios can be run. The Company cannot accomplish the tasks within thirty days from December 23, 2020, as required.

In addition, the 30-day deadline was based on timing considerations that no longer apply. The Order posits a potential RFP for solar resources that could "conclude[] by Q3 2021, so that participants can potentially take advantage of the 22% [Federal] ITC." (Order at 85.) The SCSBA submitted evidence that the 22% Investment Tax Credit ("ITC") requires projects to go in-service by 2023. (Order at 82.) SCSBA Witness Sercy testified that the Commission "would likely need to take steps soon in order to complete a procurement in time for bidders to take advantage of the ITC." (Order at 82.) Mr. Sercy further recommended that to "inform the design parameters for a competitive procurement," DESC be required to perform the described models, and SCSBA submitted a late-filed exhibit setting forth the same steps. (Late Filed Hearing Ex. 13.) These steps were the basis of the timeline in the Commission's Order.

However, the prior deadline for the 22% ITC no longer applies. On December 28, 2020, Congress passed H.R. 133, the Consolidated Appropriations Act, 2021, which extends the ITC deadline by two years. *See* H.R. 133 Sec. 132. Given this extension, the urgency on which the 30-day deadline was based no longer exists. There is no reason not to align the analysis of the specified scenarios with the other analysis required by the Order.

The record in this proceeding clearly shows that the process of modeling resource plans is complex and time consuming. When asked by attorney Snowden about rerunning models for the Company's Supplemental 2020 IRP, Mr. Bell explained, "We—we didn't completely rerun the IRP; we made selective changes that were a small subset of all the information that goes in an IRP and all the setup that's required to run a resource plan. And then we made those changes, and we—we ran PROSYM and were able to provide the outputs and the supplement to the IRP." (Tr. at 185.)

Here, substantially larger changes are being requested than what the Company previously performed. Accordingly, the evidence does not support the requirement that such work be performed within 30 days nor is there any reason to require such a schedule. DESC respectfully requests 60 days to align with the other deadlines ordered in Order No. 2020-832.

B. Finding that PLEXOS May Not Be the Appropriate Capacity Expansion Modeling Software

As Company witness Bell explained, the generation planning department for Dominion Energy as a whole is already implementing the PLEXOS model for use across all of Dominion Energy's companies. (Tr. at 150.) Dominion Energy has spent hundreds of thousands of dollars to do so. (Tr. at 151.) Using a single software across the footprint allows Dominion Energy to share resources and expert modelers among its different business units. The Commission has encouraged DESC to pursue merger synergies and it has done so by integrating software and IT platforms across its business. Denying DESC the right to use PLEXOS would be disruptive of this effort and anti-synergistic.

The Commission's ruling reopening the selection of PLEXOS appears to be based on the testimony of witness Anna Sommer on behalf of the South Carolina Coastal Conservation League and Southern Alliance for Clean Energy ("CCL/SACE"). In her testimony, Ms. Sommer expressed concern about being able to use PLEXOS and suggested another model might be used instead (although she did not recommend a specific alternative model). (Tr. at 499-503.) Her concern was that in the past, she was unable to view input files, model settings or the model manual without a read-only license, which she states costs approximately $5,000. (Tr. at

476.15.) However, she admits: "It's my understanding that that may have changed and that you can now export input files out of PLEXOS into Excel format, but it's not clear to me if you can get all of that information that's in the interface out of PLEXOS." (Tr. at 502.)

The Company disputes the characterizations of PLEXOS as lacking in transparency or capability. PLEXOS is a top-rated capacity resource optimization software used throughout the world. (*See, e.g.*, Tr. at 754 (ORS Witness Hayet explaining that the PLEXOS model originated in Australia.) Some 350 entities currently rely on PLEXOS, including governmental agencies, utilities, and other public service commissions. (*See* Tr. at 705.28-20.) They include:

a. United States Department of Energy
b. PJM Interconnection
c. American Electric Power Company, Inc.
d. Missouri Public Service Commission
e. California Public Utilities Commission
f. Midcontinent Independent System Operator
g. Independent Electricity System Operator (Province of Ontario, Canada)
h. New York Independent System Operator
i. California Energy Commission
j. National Renewable Energy Laboratory
k. Sacramento Municipal Utility District
l. PacifiCorp
m. Pacific Gas and Electric Company
n. Xcel Energy, Inc.

o. Oak Ridge National Laboratory

As Sierra Club witness Derek Stenclik explained, "PLEXOS is a third-party industry recognized energy modeling software developed by Energy Examplar and used by utilities, grid operators, developers, and consultants worldwide." (*Id.*)

Dominion Energy favors PLEXOS because it replaces multiple short and long-term grid management and forecasting tools with one integrated hub that has the ability to seamlessly pass data across phases from short-term operations to long-term planning. Integrated solutions save time because employees do not have to move between tools. It provides the Company with the ability to run scenarios in a matter of minutes rather than hours—exponentially faster results than currently available. Additionally, PLEXOS is flexible enough to allow Dominion Energy to model the effect on plans and future costs of various regulations and orders.

In addition, PLEXOS is in fact an open and transparent platform that produces all inputs and outputs used in easily exportable and easily readable form for review and audit internally and by external parties. Documentation is based in Excel format. DESC is prepared to show through the stakeholder process that the input and output tables generated by PLEXOS in machine-readable Excel format are fully sufficient for intervenors and their consultants to use the software models of their choice to prepare their reviews and testimony, just as Mr. Stenclik used similar data from the PROSYM model.

Specifically, in this proceeding, Sierra Club witness Stenclik used PLEXOS to perform his independent modeling to evaluate alternative resource portfolio options and to perform "an independent review of system modeling." (Order at 35; Tr. at 705.28-29.) Mr. Stenclik explained that he developed his analysis "utilizing the information and data provided in the IRP, as well as DESC's responses to Sierra Club's Second Set of Data Requests, including DESC's

PROSYM data files." (Tr. at 705.29.) There is no logic, or factual, legal or statutory basis for ordering DESC to acquire modeling software licenses for intervenors. This is beyond the scope of regulation. Moreover, as a practical matter, providing intervenors with the input and output data will be sufficient.

The Order intends for DESC "to adopt and implement the use of capacity expansion software starting in the 2022 IRP Update . . .." (Order at 16.) But for the reasons discussed above, doing so after first concluding a stakeholder based reselection process for the software to be implemented is not feasible. There is simply not enough time to complete all the required steps beginning with a software selections review. Instead, the more reasonable and prudent approach would be to build on the work done and resources available to implement PLEXOS. This would allow DESC to begin to work at once with stakeholders to review its PLEXOS implementation plan and approach and to consider new modeling and forecasting methods and inputs as the Company set forth in its Short-Term Action Plan. This is the more important work. The stakeholder process can then be used to elicit and resolve stakeholder concerns about accessibility to inputs, output, manuals and the like within a concrete implementation plan and framework. At the same time, DESC would propose to continue the on-going PLEXOS implementation efforts with the goal of presenting initial results in the 2022 IRP update.

The Company has already entered approximately 80% of its data into PLEXOS, trained its key resources, and begun work to fully implement this model. This work should not be wasted nor should the Company be asked to suspend implementation with the possibility of having to restart at ground zero. The important substantive work of implementing an accepted, industry standard resource optimization model should not be delayed. Therefore, the Company requests that the Commission reconsider this ruling and amend its Order so that a stakeholder process is not required to adopt and implement the use of capacity expansion software starting in the 2022 IRP Update.

CONCLUSION

For the above stated reasons, DESC respectfully requests that the Commission reconsider the specified rulings as described above in Order No. 2020-832. These reconsideration and rehearing requests are made to advance and not hinder the Company's ability to provide the Commission with the data, analyses and other modifications to the IRP process that it seeks. To that end, DESC is not petitioning for reconsideration or rehearing on any other conclusion or finding in Order No. 2020-832. DESC does not concede that those conclusions or findings are lawful or proper and reserves the right to object to them in future proceedings or at any other appropriate time. To the extent that the Order suggestions or envisions future action by the Commission, DESC reserves the right to challenge that action when taken. By not petitioning for rehearing or reconsideration, DESC does not intend to waive the right to challenge any future action by the Commission, including but not limited to future action by the Commission which is contingent or hypothetical at this time.

Respectfully submitted,

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January 4, 2021